



# I-81/Halfway Boulevard Freight Connections

**Providing Opportunities for Economic Growth, Equitable Job Access, and  
Improved Safety**

**FY2021 INFRA Grant Application ■ March 19, 2021**



*Submitted to:*



*Build America Bureau,  
Office of the Secretary of Transportation, US DOT*

*Submitted by:*



# APPLICATION TABLE

## PROJECT NAME

**I-81/HALFWAY BOULEVARD FREIGHT CONNECTIONS: MAKING WAY FOR ECONOMIC GROWTH AND SAFETY PROJECT**

*Project Sponsor* **Maryland Department of Transportation State Highway Administration**

*Was an INFRA application for this project submitted previously? If yes, please include title.* **Yes (Title: I-81/Halfway Boulevard Freight Connections)**

## PROJECT COSTS

*INFRA Request Amount* **\$37,750,000**

*Estimated Federal Funding (excluding INFRA)* **\$13,300,000**

*Estimated Non-Federal Funding* **\$40,923,000**

*Future Eligible Project Cost (sum of previous three rows)* **\$91,973,000**

*Previously Incurred Project Cost (if applicable)* **\$0**

*Total Project Cost (sum of 'Previously Incurred' and 'Future Eligible')* **\$91,973,000**

*Are matching funds restricted to a specific project component? If so, which one?* **\$3,800,000 in ARC funds, \$1,873,000 in County funds, and \$300,000 in Private funds are dedicated to the Halfway Boulevard component. 36,500,000 in State funds and \$1,000,000 in County funds are dedicated to the I-81 component.**

## PROJECT ELIGIBILITY

*Approximately how much of the estimated future eligible project costs will be spent on components of the project currently located on the National Highway Freight Network (NHFN)?*

**\$91,973,000 (100 percent)**

*Approximately how much of the estimated future eligible project costs will be spent on components of the project currently located on the National Highway System (NHS)?*

**\$91,973,000 (100 percent)**

*Approximately how much of the estimated future eligible project costs will be spent on components constituting railway-highway grade crossing or grade separation projects?*

**\$0**

*Approximately how much of the estimated future eligible project costs will be spent on components constituting intermodal or freight rail projects, or freight projects within the boundaries of a public or private freight rail, water (including ports), or intermodal facility?*

**\$0**

## PROJECT LOCATION

*State(s) in Which Project is Located* **Maryland**

*Small or Large Project* **Small Project**

*Urbanized Area in Which Project is Located (if applicable)* **INFRA Designation: Rural  
The Project is located within the Hagerstown MD-WV-PA UZA**

*Population of Urbanized Area (According to 2010 Census)* **Population 182,696 in the 2010 US Census.**

*Is the project located (entirely or partially) in Federally designated community development zone?* **Yes/No. If yes, please describe which of the four Federally designated community development zones in which your project is located.**

- Opportunity Zones: NO
- Promise Zones: NO
- Empowerment Zones: NO
- Choice Neighborhoods: NO

## IS THE PROJECT CURRENTLY PROGRAMMED IN THE...

*TIP?* **Yes; HEPMPO Transportation Improvement Program (TIP)**

*STIP?* **Yes; MDOT 2019-2022 Statewide Transportation Improvement Program (STIP)**

*MPO Long Range Transportation Plan?* **Yes; HEPMPO 2045 Long Range Transportation Plan**

*State Long Range Transportation Plan?* **Yes; MDOT 2040 Maryland State Transportation Plan**

*State Freight Plan?* **Yes; Maryland Strategic Goods Movement Plan (2017)**

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# Project Description

## Project Summary

The I-81 corridor in Maryland is the backbone of freight connectivity and efficiency for the region, providing nationally critical linkages along the East Coast, from Tennessee to New York, and serving as Washington County's primary north-south Interstate highway. Freight traffic in this corridor has grown exponentially in the five-decade period since its construction; further, demand for freight delivery in Maryland is expected to double by 2035. However, I-81 has remained substantively unchanged. Consequently, connectivity, safety, and traffic flow on this important section of the National Freight Highway Network near Hagerstown, Maryland, has suffered. Continued vehicular and truck crashes in the project area highlight the pressing need to address these trends.

*Together, the improvements provide a link that significantly improves mobility and safety in the region. INFRA funds will unlock the Project's many benefits, including:*

- **Reduce the high crash rate on I-81**
- **Reduce travel delay**
- **Provide more reliable travel times**
- **Improve connectivity and resiliency of the road network**
- **Enhance access to major freight distribution centers to improve economic competitiveness**
- **Facilitate local economic development**
- **Expand connections to jobs and service**
- **Reduce greenhouse gas emissions by reducing vehicle idling**
- **Positive impacts with BCR of 1.38**



*Frequent crashes result in hours of backlog congestion.*

Continued growth around the I-81 and I-70 corridors is placing increasing strain on both commuters and trucking in this rural community. The ability to safely and efficiently move people, freight, and goods through this active corridor is vital for national, regional, and local economic competitiveness; preserving access to jobs to provide ladders of opportunity for minority and vulnerable populations furthers the project partners' commitment to equitably growth opportunities. These access, safety, environmental, and operational concerns demand the targeted infrastructure investments presented in this application.

To this end, the Maryland Department of Transportation State Highway Administration (MDOT SHA) and Washington County are committed to planning and implementing infrastructure investments that ensure that the growth and opportunities in this region do not result in negative impacts to safety, economic outcomes, or quality of life.

## What INFRA Funds Will Support

This project is part of a multistate effort to widen I-81 and provide a vital local highway link on Halfway Boulevard to better connect two major Interstates, which together will improve freight and personal transportation, supporting economic development in Western Maryland and throughout the Appalachian Region. MDOT SHA and Washington County seek to partner with the United States Department of Transportation (US DOT) to complete a package of infrastructure improvements that will improve critical infrastructure and enhance the safe and efficient movement of people, freight, and goods. The Project improves ramp and merge lane configurations for three interchanges on this segment of I-81, including the critical I-70/I-81 interchange. In addition to improving traffic operations, the Project improvements are expected to dramatically reduce the crash rate on a segment of I-81 marked by high truck traffic levels and a troubling safety history.

**This rural safety and accessibility project is designed to stimulate economic growth. The I-81/Halfway Boulevard Freight Connections: Providing Opportunities for Economic Growth, Equitable Job Access, and Improved Safety Project** (the Project) includes two complementary projects components that together provide a much-needed widening and upgrade of a 3.5-mile section of I-81 originally built in the 1960s, and a 0.63-mile Extension of Halfway Boulevard to enhance capacity and better

connect Interstate interchanges on I-81 and I-70. The Project offers strong benefits and presents a Benefit-Cost Ratio of 1.38.

MDOT SHA, in partnership with Washington County, Maryland, requests \$37.75 million in INFRA grant funds, which represents 41% of total project costs. These funds will complete the funding package for a \$91.973 million project that confronts existing challenges in our interstate system and prepares for the growing industrial and freight traffic, as well growing development, population, and job opportunities, and traffic volume.

## Project History

### I-81 in Maryland

I-81 Phase 2 is a critical component of a four-phase, 12.1-mile, multi-year project with an estimated total cost of \$386.7 million. The expansion Project in Washington County, Maryland, stretching from Berkeley County, West Virginia, to the border with Franklin County, Pennsylvania, has been a longstanding priority for the State and represents one of the MDOT SHA's largest investments in Western Maryland, and provides both regional and national connections. Planning activities began in 2001, with the completion of a Purpose and Need Statement and preliminary engineering. More than 15 years later, MDOT broke ground in October 2016 on Phase 1, which was completed within the past year. The MDOT SHA is now aggressively preparing to advance Phase 2 through final design to begin construction; INFRA funds would provide the missing piece to advance this important project.

Design activities for Phase 2 began in June 2017. The Project is requesting funding for further engineering and construction of I-81 Phase 2, to complement the County's associated design, engineering, and construction of the Halfway Boulevard Extension.

### I-81 in the Region

Widening and modernizing of I-81 is a priority throughout the MPO region and in neighboring states, as it is critical for economic development. West Virginia DOT widened their segment of I-81 recently and Virginia has state legislation in place to find means to fund their 200+ miles of I-81. Pennsylvania is also interested in widening I-81, but given the difficulty in finding funding, it will likely wait until Maryland's section is completed.

### Halfway Boulevard in Washington County

Washington County built Halfway Boulevard west from I-81 15 years ago. Given limited funding, Washington County could not afford the additional cost to bring the road further west. Connecting this road to MD 63 has been a priority of the County for nearly two decades.

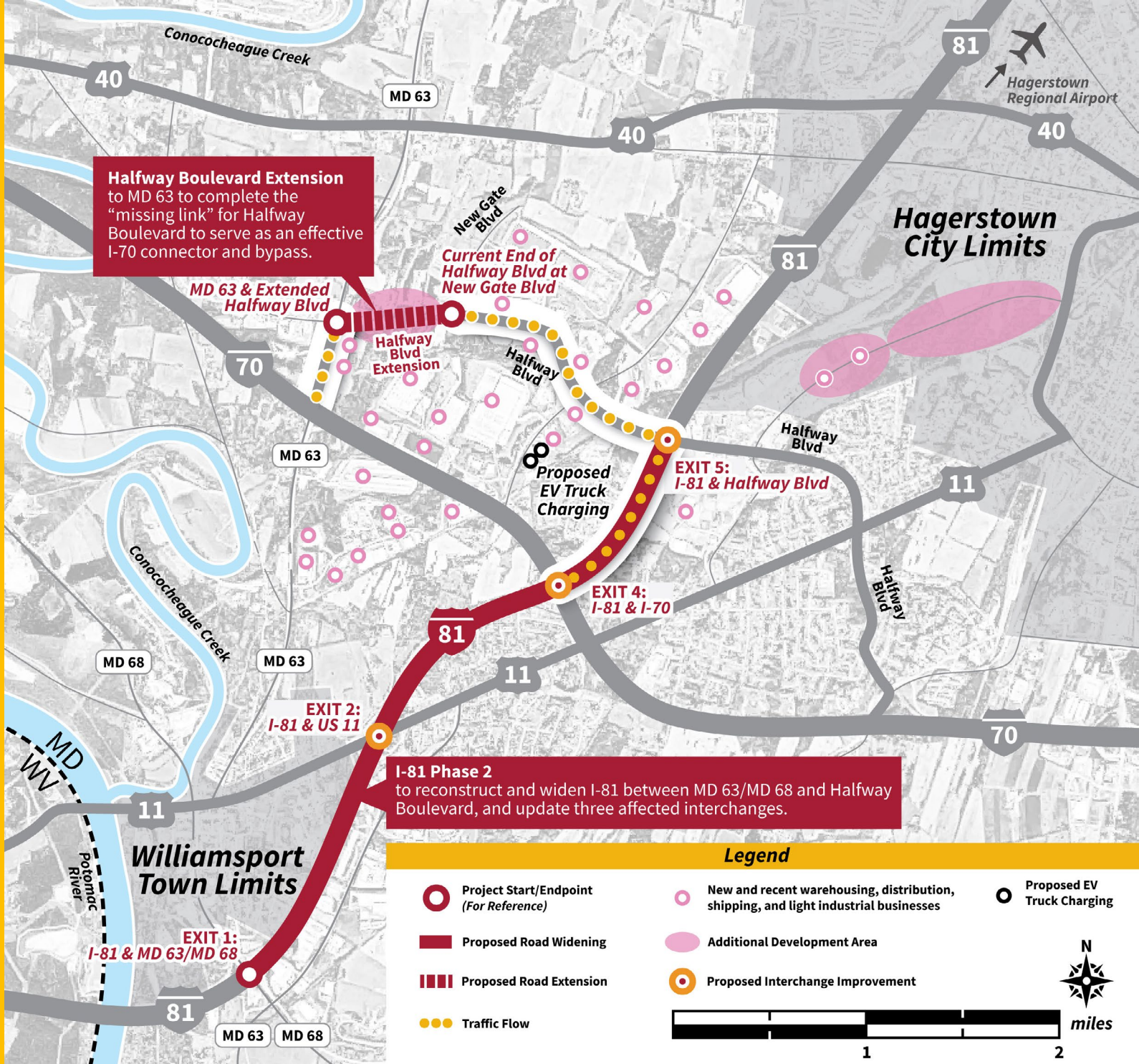
Since the existing Halfway Boulevard was constructed, the area west of I-81 has seen numerous successful developments, including FedEx, Staples, Tractor Supply, and many other distribution facilities and truck service businesses (see Figure 1). Further development is likely, given the area's proximity to a Class I freight railroad and to two major Interstates. Additionally, as electric vehicle (EV) trucks and passenger vehicles account for a growing share of traffic, infrastructure that supports this expansion is needed.

## Project Details and Phasing

The Project comprises two coordinated, complementary components that work together to address the persistent and growing challenges described. Built together, the impact of the components is greater than the sum of the two parts; either built on its own does not deliver the benefits to the same extent as when built together along the same time frame. The synergistic benefits of the components working together result in a relationship where both reinforce the benefits to truck and vehicular traffic on the highway and access to the Halfway Boulevard areas of development. The components were conceived and pursued together because they serve the same purpose and will deliver benefits that are related to one another. The components are detailed below and depicted in Figure 1.



*The truck crash rate for I-81 in Maryland is more than twice that of similar roadways in Maryland.*



**FIGURE 1 (ABOVE):**

A map of the Project area, showing the I-81 widening and reconstruction and the Halfway Boulevard Extension in blue. Interchange Improvements are shown in yellow. New and recent warehousing and distribution businesses and additional development in the area are shown in pink.

**I-81 Phase 2 Widening:**

- Reconstruct and improve interchanges along 3.5 miles of I-81 in Maryland from 2,000 feet north of MD 63/MD 68 to 1,000 feet north of Halfway Boulevard.
- Expand the Interstate from four to six through lanes with construction of two new travel lanes (one southbound and one northbound).
- Improve interchanges at the three Interstate exits within Project limits: the US 11 interchange in Williamsport, and the interchanges at I-70 and Halfway Boulevard southwest of Hagerstown.
- Implement transportation operations strategies, ITS devices, and software enhancements.
- Implement stormwater management improvements and install noise barriers as required.

### Halfway Boulevard Extension:

- Extend Halfway Boulevard 3,300 feet (0.63 miles) westward from existing endpoint near New Gate Boulevard to meet MD 63.
- Create a four-lane divided roadway, designed with a thick pavement section and wide turn radii to handle the expected heavy truck traffic.
- Implement stormwater management to include porous asphalt for shoulder/bike lane
- Install EV chargers at two locations to support and encourage expanded EV truck fleets and other vehicles.

### How the INFRA Project Will Address Transportation Challenges

The Project will address four primary transportation challenges that inhibit freight movement and safe travel along the corridor in Maryland.

#### ▪ Safety and Roadway Crashes

Crash rates have risen at an alarming rate on Maryland’s 12-mile segment of I-81 due to overall congestion, high truck traffic, and substandard design. Between 2011 and 2018, total crashes increased 54 percent and truck crashes rose by 35 percent. Within the Project limits (I-81 Phase 2), total crashes increased 54 percent and truck crashes rose by 35 percent between 2015 and 2018. Crash data from 2015-2019 show that the **truck-related crash rate along I-81 is nearly 3 times the statewide average**, with a crash rate of 13.2 compared to the statewide crash rate of 5.0 (crash rate is determined per million vehicle miles traveled by each category of vehicle). As this project awaits a full funding package, crashes continue to negatively impact – or even end – individuals’ lives.

#### ▪ Inadequate Capacity to Reliably Carry Growing Freight Demand

#### ■ TABLE 1 (BELOW):

*Key Statistics in the Project Area*

Crashes (‘15-’19)	Fatalities (‘15-’19)	Annual Hrs Delay (‘15-’19)	No-Build LOS (Projected)
562	2	>235,000	B-F

The existing number of lanes cannot accommodate current traffic volume and projected growth through 2045. Currently, the Maryland I-81 corridor is a four-lane facility and carries an average of 19,400 trucks per day, more than one-quarter – 27 percent – of all vehicles. In a 2015 study, the MDOT SHA found that I-81 is the most heavily traversed corridor by trucks in the entire State and will see a 56 percent increase in truck VMT by 2045. Freight moved in tons is expected to increase by roughly 70 percent over the next 25 years, with forecasts indicating approximately 30,000 trucks per day by 2045.

With traffic on I-70 projected to grow as well, the benefit of having an emergency detour route along MD 63 and Halfway Boulevard will increase over time.

On Halfway Boulevard, the presence of I-81, I-70, and CSX (which has an intermodal facility in Chambersburg, approximately 20 miles to the North) is driving continued growth in traffic from existing distribution facilities, and creating demand for new ones, with one warehouse along New Gate Boulevard recently completing its Phase 3 expansion in 2019. As traffic from these developments grows, it brings new trucking-related development as well, including truck servicing, fueling stations, and overnight truck parking, ensuring that this area will continue to be an important node in the regional and national truck freight network. Increasingly, congestion occurs at the Halfway Boulevard/I-81 interchange as trucks attempt to get on the Interstate network or access amenities.

The Project reduces this problem in two ways: First by increasing capacity on I-81 and improving the Halfway Boulevard interchange; and second by extending Halfway Boulevard west to MD 63 to provide easy access I-70,

“ I along with my family are personally in support of this project because on May 3, 1998 my father, a volunteer firefighter was operating at a multi-fatal collision just south of this location when he was struck and killed by an inattentive driver. Too many families have suffered the loss of a family member along this section of Interstate Highway. Any form of improvement in the corridor would benefit safety as well as commerce.”

#### Joe-Kroboth

Son of Captain Kroboth from the Volunteer Fire Co. of Halfway.

reducing the demand on the I-81 interchange. These improvements are needed together to improve connections and to maintain Halfway Boulevard as an attractive location for new development and an efficient location for existing warehouse and distribution centers.

- **Traffic Operations, Congestion Reduction, and Environmental Sustainability**

Increasing truck and vehicle volume has accelerated the problems resulting from existing roadway deficiencies. These deficiencies include substandard interchange ramp configurations and insufficient lengths of merge lanes. Maryland is recognized as having the **most dangerous stretch of I-81 in the nation**, where there is a concentration of 10 interchanges within just 12.1 miles; the high concentration of truck traffic along this section only increases safety hazards along this section. The 3.5-mile I-81 component of this Project contains 3 interchanges, including the I-70/I-81 four-leaf clover interchange.

Traffic volumes along I-81 south of I-70 are anticipated to grow by over 35 percent between now and 2045. These volumes are expected to result in several failing merge, diverge, and weaving operations at the US 11 and I-70 interchanges in the absence of any improvements in the corridor. Further, future travel speeds along both northbound and southbound I-81 are expected to decrease significantly between the US 11 and I-70 interchanges. The level-of-service (LOS) on the Phase 2 segment currently ranges from B to D and is projected to deteriorate to B to F by 2040 under the No Build scenario. If no improvements are made, the I-81 southbound merge from I-70, I-81 southbound merge from US 11, I-81 southbound diverge to US 11 are anticipated to operate at a LOS F, E and F respectively.

Operations are also affected by capacity constraints caused by the four-lane configuration. In addition to contributing to regular peak hour congestion, a crash or construction work that blocks a lane of traffic can cause substantial delays. With three lanes in each direction, a single blocked lane of traffic will have a much lower impact on traffic delay.

Addressing traffic operations will also yield positive environmental impacts; by reducing high levels of congestion, the Project will **lower emissions due to idling** in this highly trafficked corridor. The new EV charging locations included in the project will support and encourage the expansion of EV truck fleets by providing the necessary charging infrastructure in the project area, convenient to both I-81 and I-70.

- **Connectivity and Access to Jobs and Economic Opportunity**

Halfway Boulevard currently ends just a half-mile from MD 63, which has a direct interchange with I-70 less than one mile to the south. Construction of this new link will eliminate the need for vehicles on Halfway Boulevard – a major truck traffic generator – to travel east to reach I-70 west. Halfway Boulevard is a key connection to truck parking, services and amenities, and other truck origins and destinations. It also provides a detour if a serious incident requires lane closures on the segment of I-70 between the I-81 and MD 63 interchanges, or on I-81 between Halfway Boulevard and I-70. Currently traffic seeking a detour brings truck and other traffic to residential and commercial areas, such as the nearby Valley Mall area, which experiences significant drops in sales when I-81 is backed up; when an accident occurs on I-81, the mall as cited a decrease in sales from 17% to 28% for the day, depending on the length of time the accident backs up traffic.

Further, this connection facilitates greater access to jobs and other opportunities. With new and expanding development occurring in the Project area, it is critical to ensure access to these jobs is reliable and efficient. Further, the Project Area is also in a travel corridor for many residents from the north commuting to jobs to the south; bottlenecks have impacts that radiate far beyond the Project location, impacting workers in the broader region. This significance is discussed in greater detail in Section 1.6.

### **Regional and National Significance**

Washington County is a rural county in western Maryland, bordering Pennsylvania, Virginia, and West Virginia. The improvements brought by this Project provide benefits to freight travel across a multistate region, as well as providing substantial local benefits. Notably, the Project Area is a key connection with CSX Transportation at Hagerstown, where rail and roadway freight converge.



## National Significance

Major highway corridors are defined as those that carry at least 8,500 trucks per day or more than 50 million tons per year.<sup>1</sup> The Maryland I-81 corridor carries an average of 19,400 trucks per day, and I-70 in the Project area carries 11,100 trucks per day, with a total weight of nearly 146-million tons. I-81, or locally named the Maryland Veterans Memorial Highway, is a continuous north-south highway extending from Canada to Tennessee designated as a major freight corridor on the National Highway Freight Network. I-81 is a major connector linking Virginia, West Virginia, Maryland, and Pennsylvania, and is heavily used as a long-distance truck bypass around the congestion of I-95 and other coastal routes, delivering freight throughout the region. This highway is also part of the Strategic Highways Network, as it has been identified as critical to the Department of Defense's domestic operations, emergency mobilization, and peacetime operations. Due to its proximity to Washington, DC, and other major metropolitan areas along the East Coast, this corridor's ability to handle emergency evacuations due to terrorism or natural disaster is crucial.

## Connectivity to National Highway Freight Network

I-81 is vital for the distribution of raw materials and finished goods between Appalachia and some of the largest consumer markets in the Northeast. Products like gravel, sand, wood products, non-metal mineral products, plastics, animal feed, foodstuffs, pharmaceuticals, machinery, motorized vehicles, and furniture are moved along I-81, comprising an estimated **10 percent of the nation's gross domestic product with a gross value of more than \$1.85 trillion.**

Several major North American distribution facilities are located near the I-81 corridor, such as the Nova Bus Manufacturing and Headquarters and Prevost Manufacturing and Headquarters in Quebec, Canada, to the Volvo Group Powertrain Manufacturing and Technology facility in Hagerstown, Maryland, to the Mack Trucks World Headquarters in Greensboro, North Carolina. More specifically, within the Project area are Tractor Supply Company, Sealy Mattress, FedEx, Home Depot, Fives Landis, an Amazon fulfillment center and many other companies. Additionally, Volvo has a manufacturing location in the Project Area, which is the last automotive manufacturer left in Maryland. This plant is also manufacturing EV technology – an important component in the transportation industry's efforts to confront climate change.

I-81 is also important to intermodal freight traffic, providing access to the Virginia Inland Port, which is located approximately 60 miles south of the Project area along I-81.

The Maryland segment of I-81 currently creates a pinch-point that delays these high volumes of interstate freight movements. The Project will benefit this multistate and international freight traffic with important capacity improvements by adding one lane in each direction to manage the growing traffic, and by increasing safety in the Project area along I-81 with a high crash rate.

## National Benefits to Long Distance and Through Travelers

During peak hours, all through travelers on I-81 will benefit from the reduction in crashes, the increased travel speeds, and the reduction of crash-related delay brought by the construction of an additional lane in each direction. Businesses that move freight and manage logistics along the East Coast, Appalachia, and the Midwest are therefore also primary end users for the Project.

Local freight companies and truckers will further benefit from the connectivity provided by the Halfway Boulevard Extension, with long distance truck trips originating on or destined for Halfway Boulevard having shorter trips to/ from I-70 west of MD 63. Some of these same benefits will also accrue to some of the long-distance through traffic that may exit the Interstate and stop to buy fuel, food, or to take a required rest break, often staying overnight.



### **One of the Nation's Freight Backbones:**

*I-81 is essential to moving freight from Canada to Tennessee: Thousands of regional jobs in MD, WV, and PA are dependent on I-81 moving freight through Western Maryland.*



“We are excited to be a partner with MDOT on an Electric Vehicle (EV) truck charging pilot opportunity as part of this grant. If awarded the grant, we are committed to working with MDOT to test and demonstrate EV truck charging at our locations along I-81 and Halfway Blvd. As the regional truck EV fleet grows, these lessons can be shared with the US Department of Transportation and other interested parties, including those of us in industry. As an EV Ready corridor, I-81 connects to a network of EV charging locations in Maryland, Pennsylvania, West Virginia and Virginia. An EV truck charging pilot will strengthen the commitment to EV technology in this corridor as green technology is advanced in the region to combat climate change.

**Robin L Ferree**

Bowman Development Corporation

## Regional and Local Significance

As noted above, I-81 is a major thoroughfare through neighboring states and the Appalachian region, and a key link for this largely rural, low-income area to get products to market. It is also critical to the economy of the multistate region, which includes Washington County, West Virginia’s Eastern Panhandle area, and part of Pennsylvania. To this end, there is a higher rate of workers commuting in to rather than out from the area to access jobs. The Project offers important capacity improvements for the regional I-81 corridor that passes through multiple states; currently the Project area serves as a pinch-point with detrimental regional impacts. The regional and local benefits of the I-81 improvement are discussed below, followed by the benefits of the Halfway Boulevard Extension component.

## Efficient Access to Truck Services, including EV Truck Charging

The Project improves access to the many services for Interstate trucks that pass through the Project area – the crossroads of I-81 and I-70 – including new EV Truck Charging infrastructure included in the Project. With freight-oriented land uses that attract and generate thousands of truck trips every weekday, the Project area has become an important service center for the tens of thousands of long-distance through-trucks as well. In addition to a Pilot Travel Center and a recently completed secure truck parking and rest area, there are several truck repair facilities, convenience stores, and other truck-oriented businesses on Halfway Boulevard. There is a second Pilot Travel Center on MD 63 near the I-70 exit with parking for 84 trucks, and an average daily use of 76 trucks per day.

The location and availability of rest stops has become critical to truck driver productivity. Truck drivers spend almost an hour a day looking for truck parking to comply with Federal Hours of Service (HOS) regulations, adding up to an estimated \$5,000 per year in losses for drivers.<sup>2</sup> Having safe, reservable parking spaces at this busy freight location is important, and the Halfway Boulevard connection included in this Project will provide easier access to the new rest facility, including faster trip times on I-81, a shorter trip to/from I-70 west, as well as more reliable trip times should there be a lane-blocking event on either Interstate.

As companies increasingly expand their EV fleets, providing the infrastructure to support them is critical to encourage this growth. To that end, the project

includes two locations for EV charging that will encourage this growth while also offering a pilot opportunity to better understand the needs, concerns, challenges, and outcomes of this investment. MDOT SHA will monitor the success of these charging stations and report on key performance measures every two years beginning the first year construction commences through four years following construction completion. The project components work together to create this infrastructure while also offering better connectivity to the investments.

## Increasing Capacity and Improving Safety

I-81 is the most heavily trafficked freight route in Maryland’s State highway system, with weekday vehicle miles traveled by trucks expected to grow by 56 percent by 2040, **supporting major interstate commerce**. Improvements to I-81 will provide numerous benefits in the larger Hagerstown/Eastern Panhandle region and will become increasingly needed as traffic grows. I-81 is a critical commuter corridor connecting employees from rural areas to employment centers in Hagerstown, Martinsburg, WV, Chambersburg, PA, and other cities, and it is subject to daily congestion, as well as frequent backlog congestion from the high number of crashes.

<sup>2</sup> <https://www.ttnews.com/articles/opinion-truck-parking-quiet-crisis-facing-industry>

The proposed widening and interchange upgrades realized through the INFRA investment will substantially increase freight volume capacity, lessen delay, and are expected to reduce the number of crashes in the I-81 corridor by at least 40 percent. **These improvements complement recent investments to improve I-81 in the region.** MDOT SHA has recently completed two projects in the vicinity of the I-81 Widening Phase 2 project. The first project included an acceleration lane extension along I-81 northbound from I-70 to Halfway Boulevard, and an acceleration lane extension along southbound I-81 from Salem Avenue to US 40. This work was completed in 2018. The second project was I-81 Widening Phase 1, which widened I-81 to three lanes from US 11 in West Virginia to north of MD 63/MD 68 (including the Potomac River bridges) and was completed in 2021.<sup>3</sup> Although not yet funded, MDOT SHA plans to complete the final 7.3 miles of I-81 corridor widening and improvement in two future phases, from Halfway Boulevard north to the Pennsylvania State line.

In addition to MDOT SHA's recently and planned investments, several projects are underway or were recently completed along I-81 in West Virginia. The first was the widening of I-81 to three lanes from Exit 23 (US 11) to just north of Exit 16 (WV 9/Edwin Miller Blvd/Hedgesville Rd), which completed in approximately 2014. The second is the widening of I-81 to three lanes from Exit 12 (WV 45/Apple Harvest Road) to Exit 8 (Tabler Station Road); work is approximately 60% complete. Work is also underway to resurface the I-81 NB/SB ramp at Exit 16 (WV 9/Edwin Miller Blvd/Hedgesville Rd.) and to replace the NB and SB I-81 over Mill Creek overpasses south of Exit 5 (WV51/Gerrardstown Rd.). Work on the overpass project is approximately 20% complete.

### Improving Commute Times

This project provides overall improved circulation and mobility for local and regional residents through strategically coordinated investments on I-81 and Halfway Blvd. Washington County residents, businesses, and those who commute through the project area are among the primary end users for the Project. The County's 2019 population is 151,049 is concentrated around Hagerstown and along I-81, as well as smaller pockets living in the areas of Smithsburg and Boonsboro. From 2006 to 2016, the region's **overall population increased by approximately 10 percent, with an increase of 3.2 percent for Washington County.** The City of Hagerstown has grown by an additional 10 percent since the turn of the century and is now Maryland's sixth largest city, supporting economic growth in Western Maryland and adjacent states. Of the more than 66,000 jobs in Washington County, 13,000 workers drive in from Pennsylvania and West Virginia, most along the I-81 corridor.

With major development underway, including the NorthPoint Development that includes 2.2 million square-feet of warehousing and distribution space and will account for 1,500 new jobs when complete.<sup>4</sup> I-81 is also used for outbound commuters, with 10,000 workers commuting to neighboring states. While the long-term effects of the COVID-19 pandemic have yet to be fully realized, current suggest a migration of population from urban areas to rural counties, such as the Project location.<sup>5</sup> If this is to continue, Hagerstown may see an acceleration of population, further straining the local roadways

In addition to the everyday peak hour congestion on these roads, regional commuters must also deal with lengthy backups caused by crashes on I-81 or I-70 in the Project area. With the Project, the number of crashes on I-81 is expected to decrease dramatically, and the Halfway Boulevard Extension will provide a needed detour around lane-blocking crashes should they occur on I-81 or I-70 in the Project area.

### Supporting Economic Development through Partnership

The County has identified the Extension of Halfway Boulevard to MD 63 as an essential link for economic development. It will assist with traffic flow and reduce travel time, two factors important to business retention, and to continued business development along the Halfway Boulevard corridor. Most businesses in the Project area are related to long-distance freight transportation and depend on access to I-70 and I-81. These include over five million square feet of warehouse and distribution centers, three gas stations/ travel centers, Freightliner Repair, Rice Tire, and other businesses.

<sup>3</sup> <https://news.mdot.maryland.gov/mdot-sha-completes-i-81-bridges-project-at-maryland-west-virginia-line-in-washington-county/#:~:text=The%20Maryland%20Department%20of%20Transportation,Potomac%20River%20in%20Washington%20County.&text=By%202035%2C%20daily%20I%2D81,to%20increase%20to%2091%2C850%20vehicles.>

<sup>4</sup> [https://www.heraldmillmedia.com/news/local/northpoint-development-far-ahead-of-schedule/article\\_9e7937c9-9909-5cd4-93cd-da2277640247.html](https://www.heraldmillmedia.com/news/local/northpoint-development-far-ahead-of-schedule/article_9e7937c9-9909-5cd4-93cd-da2277640247.html)

<sup>5</sup> <https://www.forbes.com/sites/jrose/2020/08/06/time-to-move-data-suggests-americans-may-flee-to-rural-areas-post-covid/> 8

“These improvements to I-81 are critical infrastructure investments that will help citizens here in Washington County, across Western Maryland, and all across our State go about their daily lives in a faster, more efficient, and safer manner.”

**Governor Larry Hogan**  
State of Maryland

The I-81/Halfway Boulevard Freight Connections Project has strong constituent and business advocacy at the local and regional levels. The I-81 Corridor Coalition is a consortium of stakeholders dedicated to improving the safety, continuity, and efficiency of commercial and personal travel along the I-81 corridor. This regional partnership comprises state departments of transportation, metropolitan and regional planning organizations, non-governmental organizations, and private entities located across six states. The widening of I-81 throughout the corridor enjoys support from key stakeholders because of its impact on economic growth in the region. Grassroots efforts from local officials and the public have led the MDOT SHA and the Hagerstown/Eastern Panhandle Metropolitan Planning Organization (HEPMPO) to reprioritize funding in the HEPMPO long-range transportation plan to advance this Project. Widening I-81 has been identified as the top priority for the MPO region for nearly 20 years and is the transportation priority for Washington County.

Further, I-81 is a recognized catalyst for economic development in the County. Improvements to safety and travel time on I-81 will directly impact the competitiveness of existing businesses, and the attractiveness of the region to businesses looking to locate or expand their facilities.

The Halfway Boulevard Extension will benefit existing and future businesses in the immediate Project area by reducing travel distance to I-70 west by one to three miles, saving up to four minutes. As I-70-bound traffic diverts to MD 63, the Project may also reduce the delays currently experienced by trucks entering I-81 at Halfway Boulevard.

**The Project will also open 180 acres for development.** The private developer, Bowman Development Corporation, which is dedicating right-of-way, is building a 450,000-square foot facility on the site surrounding the Halfway Boulevard Extension. The facility will be a combination of warehouse and manufacturing that will capitalize on the existing truck traffic feeding from the linkage between I-81 and I-70. The total value of the expected development is \$48 million, including the warehouse/manufacturing building, a retail/convenience store, and new roads and other site work.

## Project Location

The Project is entirely in Washington County, Maryland, part of the State’s 6th Congressional District, within the Hagerstown, MD-WV-PA Urbanized Area (UZA), which is considered rural for the purposes of the INFRA grant. The Hagerstown UZA had a 2010 Decennial Census population of 182,696. Geospatial coordinates are 39.63 latitude, -77.79 longitude.

The I-81 Phase 2 Corridor Expansion begins on I-81 from 2,000 feet north of MD 63/MD 68 to 1,000 feet north of Halfway Boulevard, a distance of 3.5 miles. The Halfway Boulevard Extension extends from New Gate Boulevard (the current northwestern terminus of Halfway Boulevard) 0.63 miles west to MD 63, approximately 0.4 miles north of the MD 63 interchange with I-70.

As shown in **Figure 1**, the Project will improve the following I-81 interchanges:

- Exit 2: US 11
- Exit 4: I-70
- Exit 5: Halfway Boulevard

### Hagerstown

Hagerstown, MD is the largest city in the HEPMPO area. The center of the region, Hagerstown is nicknamed “Hub City” for its position at the crossroads of I-81 and I-70, and the CSX, Norfolk Southern, and Winchester & Western Railroads. Hagerstown is also the commercial and industrial hub for a tristate area that includes Western Maryland, South Central Pennsylvania, and the Eastern Panhandle of West Virginia.

The County benefits from its convenient location in the heart of the Appalachian region, where excellent rail service and the national highway network provide access to 50 percent of the nation’s population overnight. Additionally, the Hagerstown Regional Airport off I-81 services about 50,000 passengers per year. Approximately 20 business and industrial parks, including 2 technology parks, are concentrated in the Hagerstown and Williamsport areas with easy access to I-81 and I-70, as shown in **Figure 1**. Nearly 2,180 acres are ready for commercial and industrial development, and approximately 6 million square feet of office, commercial, warehouse, and manufacturing space are in use or available for sale or lease along Halfway Boulevard alone.

The availability of industrial and office properties, combined with easy access to Maryland’s busiest freight highway, I-81, position Washington County for continued growth and development that is anticipated in the short- and long-term horizon. Currently, Washington County has more than 71,045 workers at its 3,450 companies and is anticipating strong and stable growth with the availability of developable land along I-81. The Greater Hagerstown region is a fast-growing area, with growth of 4.9 percent between 2010 and 2016 according to the US Census. It is a major employment center for the surrounding rural region, with nearly half of all workers commuting in from neighboring states. Local businesses such as the FedEx Mid-Atlantic distribution sites and Volvo Trucks powertrain manufacturing plant depend heavily upon free-flow access to both I-81 and I-70 for efficient supply chain management.

## Project Parties

Washington County, Maryland, and Maryland Department of Transportation State Highway Administration (MDOT SHA) are joint applicants that will work in partnership, with grant funds going to MDOT SHA, due to the agency’s extensive experience managing and executing similar large, grant-funded projects and is therefore prepared to ensure the work complies with all state and federal requirements. A private developer is also dedicating right-of-way as a project contribution. The delivery and oversight of the Project components is described below.

### **MDOT SHA**

MDOT SHA is entrusted with guiding the safe, efficient mobility of all those who live, work and travel in Maryland. As one of the Maryland Department of Transportation (MDOT) Transportation Business Units (TBUs), MDOT SHA is guided by MDOT’s mission statement to be a “customer-driven leader that delivers safe, sustainable, intelligent, and exceptional transportation solutions in order to connect customer’s to life’s opportunities.” MDOT SHA has a proven track record for grant oversight and implementation, and therefore will be responsible for grant implementation, including day-to-day management, coordination among project partners, quality control, and project evaluation.

MDOT SHA will execute the construction of improvements to I-81, including interchanges, approaches, and associated work such as stormwater management facilities and noise barriers. The Project Management Plan for I-81 (including Phase 1, which is underway) is included in the Appendix. MDOT SHA will also complete engineering design work (partially completed), and any needed acquisition of right-of-way.

### **Washington County**

Washington County will complete the engineering design work for the Halfway Boulevard Extension. The new road will be delivered by Washington County using competitively bid contracts. Washington County is fully qualified to carry out this work, having constructed similar roads, including the existing portion of Halfway Boulevard.

### **Private Developer: Bowman Development Corporation**

A private developer, Bowman Development Corporation, currently owns the right-of-way for this component of the Project and will dedicate it to the County as part of the Project. The developer, as part of its improvements will provide any needed work along MD 63 and facilitate links to other roads in its new development.

The Project includes a lengthy list of project supporters across a range of stakeholder groups, including elected officials from across the local, state, regional, and federal level; economic development groups, private businesses, and professional associations. The full list of Letters of Support can be found in the **Appendix**.

Pilot Travel Center and AC&T are partnering with MDOT SHA and Washington County to advance the EV truck charging pilot included in this Project. These two locations offer critical infrastructure support to truck fleets, including overnight facilities, restrooms, showers, and other services. Both will provide the space for the EV charging infrastructure included in the Project, and are committed to working hand-in-hand with the Project Partners to distribute information to truck fleet personnel and gather feedback, as demonstrated in their letters of support.

# Grant Funds, Sources and Uses of Project Funds

This application requests \$37.75 million in INFRA grant funds for the Project with a total cost of \$91.973 million. Non-federal funds from the State, local, and private sources account for 44.5 percent of project costs. INFRA (41.0 percent) and other federal funding from the Appalachian Regional Commission (ARC) (14.5 percent) account for the remaining 55.5 percent.

## Budget and Spending Plan

### TABLE 2 INFRA Project Budget Summary by Source and Use (BELOW):

*summarizes the INFRA Project sources and uses of funds for the \$91.973-million project.*

INFRA Project Budget Summary by Source and Use	Federal Sources (\$million)		Non-federal Sources (\$million)	Total (\$million)
	INFRA	Other Fed		
Pre-construction	0	9.5	1.1	10.6
Construction	37.75	3.8	39.823	81.373
<b>TOTAL</b>	<b>37.75</b>	<b>13.3</b>	<b>40.923</b>	<b>91.973</b>

### TABLE 3 INFRA Project Budget Summary by Fiscal Year (BELOW):

*provides the INFRA Project's spending plan of funding sources and uses anticipated to be utilized over time. Final design, right-of-way acquisition and utility relocation are anticipated to occur in FY 2023, adding to federal and state funds already expended in this and prior fiscal years on pre-construction activities. Construction is anticipated to start in FY 2023 and be completed in FY 2026.*

	Project Budget (\$ million)						
	FY-21	FY-22	FY-23	FY-24	FY-25	FY-26	TOTAL
Pre-Construction	0.2	4.3	6.1	0.0	0.0	0.0	10.600
Federal	0.0	3.9	5.6	0.0	0.0	0.0	9.500
INFRA	0.0	0.0	0.0	0.0	0.0	0.0	0.000
Other	0.0	3.9	5.6	0.0	0.0	0.0	9.500
Non-Federal	0.2	0.4	0.5	0.0	0.0	0.0	1.100
<b>MATCH</b>	<b>0.2</b>	<b>0.4</b>	<b>0.5</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>1.100</b>
Construction	0.0	1.17	3.7	32.9	22.0	21.6	81.373
Federal	0.0	0.0	2.55	17.2	11.0	10.8	41.550
INFRA	0.0	0.0	0.75	15.2	11.0	10.8	37.750
Other	0.0	0.0	1.8	2.0	0.0	0.0	3.800
Non-Federal	0.0	1.17	1.15	15.7	11.0	10.8	39.823
<b>MATCH</b>	<b>0.0</b>	<b>1.17</b>	<b>1.15</b>	<b>15.7</b>	<b>11.0</b>	<b>10.8</b>	<b>39.823</b>
Total Federal	0.00	3.90	8.15	17.2	11.00	10.80	51.050
Total Non-Federal	0.20	1.57	1.65	15.7	11.00	10.80	40.923
<b>TOTAL</b>	<b>0.20</b>	<b>5.47</b>	<b>9.80</b>	<b>32.90</b>	<b>22.00</b>	<b>21.60</b>	<b>91.973</b>

None of the requested INFRA funds would be subject to the \$500 million maximum for non-highway, bridge, railroad crossing, or grade separation projects.

ARC has awarded two Local Access Road grants to Washington County for the Halfway Boulevard Extension portion of the Project, totaling \$3.8 million. These funds do not require a non-Federal match. However, the County is contributing \$2.173 million in County and Private funds for this Project component. Documentation of the commitments for these funds is available in the Appendices.

While widening I-81 has been a top priority for over 20 years, the barrier to getting this Project built is funding, given that County and State resources are limited. MDOT covered the cost of Phase 1 with some assistance from West Virginia. After many years, Phase 1 is now complete. **Without this grant, MDOT will not be able to fill the remaining funding gap, indefinitely delaying the completion of this important project. During this time, growing traffic will only worsen the safety and congestion problems on I-81.**

Spending by Project component is shown in **Table 4**. A detailed cost estimate for each component is available in the appendices. These cost estimates are based on Preliminary Engineering, and include reasonable contingency factors appropriate to the scope of each component. For the I-81 component, a Financial Plan and Project Management Plan have been developed to identify and mitigate potential cost and schedule problems.

**TABLE 4 (BELOW):**  
*Uses of Project funds as distributed between the various Project activities and components.*

Source of Funds	Amount (millions)
INFRA	\$37.75
Other Federal	\$13.3
Total Federal	\$51.05
MDOT SHA	\$38.75
Washington County	\$2.173
<b>Total</b>	<b>\$91.973</b>

The appendices also include the results of a Federal Highway Administration (FHWA) Cost Estimate Review (CER) for widening all of I-81 in the State of Maryland. The CER workshop was conducted with a review team consisting of FHWA, MDOT SHA, and consultants to verify the accuracy and reasonableness of the cost estimates and schedule, and to develop a probability range for the cost estimate that represents the Projects' current stage of development. The results were used as the basis for setting the baseline total cost in the Initial Financial Plan.

Washington County and MDOT understand that cost overruns on either component of the Project will be their responsibility. Further, construction contracts typically are structured to shift the risk of cost overruns to the construction contractor.

### PREVIOUSLY INCURRED EXPENSES

Prior to FY 2021, MDOT SHA has spent \$3.5 million on planning for the I-81 corridor and \$4.0 million on design for I-81 phase 2. In addition, MDOT spent \$103.9 million on design and construction of I-81 phase 1, which was completed in 2020, \$39.8 million of which was contributed by West Virginia.



*In 2019, a serious truck crash between two tractor trailers in the Project area on I-81 southbound between Halfway Blvd and I-70 closed both lanes of I-81 southbound traffic for two hours.*

## V Merit Criteria

MDOT SHA and Washington County are together seeking INFRA funding because of the high burden of the cost of widening I-81 on the County and the State, particularly given that over 90 percent of the freight traffic in the County is through-traffic, neither originating in nor destined for Washington County. Washington County officials and business groups have put in great effort over the years to commit local funding, secure the ARC grant, and include Private contributions as part of the funding package.

### Support for National or Regional Economic Vitality

The Project's BCA shows that the improvements to I-81 will support regional economic vitality in Western Maryland by improving safety, reducing travel delay, restoring good condition of infrastructure, supporting economic development and reducing barriers for low-income residents to access jobs.

Project Impact	BCA Measure
Significant reduction in traffic fatalities and serious injuries	The improvements to I-81 are projected to result in a decrease of 3 fatalities and 205 injury accidents in the project lifecycle, or 0.13 fatalities and 10.2 injuries per year.
Improved interactions between roadway users, reducing the likelihood of high-consequence events	Congestion and merging traffic results in frequent sideswipe and rear-end collisions and approximately 20% of crashes on the I-81 corridor involve trucks. The additional lane in the I-81 highway mainline will reduce dangerous weaving conditions and reduce total crashes by an estimated 26 percent, or 714 total crashes, for a discounted value of \$31.4 million.
Reduced travel delay in the freight supply chain	Traffic congestion in the Project area results in slower-than-average speeds and reduced vehicle throughput for business, personal and freight travel. The Project will reduce bottlenecks and reduce truck travel time delays by 659,400 vehicle-hours traveled with a discounted value of \$6.9 million. These savings are generated by three effects of the project: 1) avoided crash-related delay, 2) travel time saving on I-81 resulting from increased capacity and interchange upgrades' improvements to traffic operations, and 3) reduced truck hours related to shorter trips for trucks traveling between Halfway Boulevard and I-70.  As assessed in the BCA, the annual benefit of reducing crash-related delay is estimated at 671,800 hours over the 20-year analysis period. The BCA calculated a total travel time savings of \$5.9 million hours during the 20-year analysis period.
Restored good condition of infrastructure that supports commerce and economic growth	Expansion of the highway and the elimination of the detouring traffic will reduce the rehabilitation costs of the roadway over the analysis period and result in a projected \$13.2 million in discounted benefits.  The prevented damages to the local road infrastructure are calculated to be \$0.6 million in discounted 2019 dollars.
Reduced barriers separating workers from employment centers	Existing travel delay due to I-81's insufficient capacity creates barriers for Washington County residents seeking to travel to employers on the I-81 corridor. The 3.8 million PHT reduction in travel delay generated by this project has the potential to reduce barriers between workers and employment centers by improving travel time reliability, allowing workers to consistently arrive on time to work.



Category	Unit	Quantity	Direction
Vehicle-Miles Traveled	VMT	42,773,700	▼
Person-Hours Traveled	PHT	3,970,300	▼
Fatalities	#	3	▼
Injury Accidents	#	205	▼
Property Damage Only (PDO)	#	507	▼

### Job Creation

The Council of Economic Advisors (CEA) estimated that every \$1 billion in Federal highway and transit investment funded by the American Jobs Act would support 13,000 jobs for one year. Based on this rate, this project’s investment of \$104.3 million in improved roadway infrastructure on I-81 will support 1,352 new jobs for one year.

The I-81 improvements will **improve access to at least seven companies with union jobs** (Table 5).

#### ■ TABLE 5 (BELOW):

Pepsi Bottling, located on Elliott Parkway in Williamsport   Approx. 100 employees	Fives Landis on Halfway Boulevard   100 employees
UPS on Oak Ridge Drive   Approx. 270 employees	CertainTeed Corp. on Governor Lane Boulevard   275 employees
Roadway Express / Yellow Transportation on East Oak Ridge Drive   180 employees	Volvo Powertrain Production   1500 employees
Sealy Mattress on Elliott Parkway   115 employees	

### Estimated Freight volume and share

At 19,400 trucks per day, freight comprises 27 percent of all vehicles traveling on I-81, and this share will continue to grow as freight volumes increase. The American Trucking Association estimates that freight volumes will grow 3 to 4 percent over the next two years on average before settling down to the normal average of 1.5 to 2 percent thereafter. This projection reflects at least 7.5 percent growth in freight over the next three years and 10.5 percent growth over five years. This is supported by FHWA’s Freight Analysis Framework (FAF) forecasts, which foresee truck traffic on I-81 in Maryland to increase by more than 50 percent over the next 30 years to reach nearly 30,000 trucks per day by 2045. With this expected increase in both through freight traffic and other traffic types, it is critical to increase capacity in this corridor.

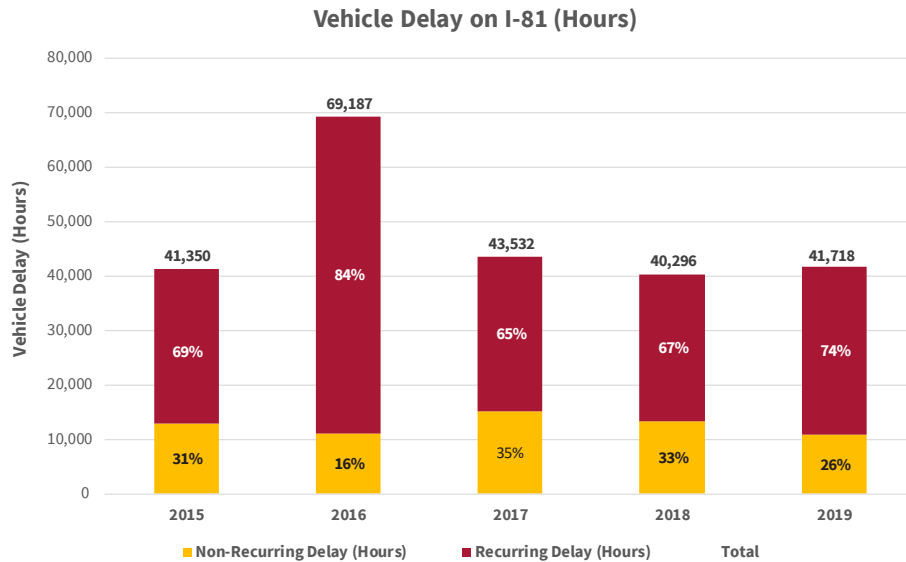
### Improved interactions between roadway users

I-81’s existing design creates dangerous weaving, merge and diverge conditions associated with closely-spaced interchanges that drive the interstate’s high crash rate. At 15 percent, crashes that occur on Maryland’s stretch of I-81 represent a disproportionate number of crashes in Washington County. The number of crashes averages 62 per year.

High truck volumes also lead to greater risk for serious crashes that can cause fatalities and injuries, as well as resulting in hours of backlog congestion. On I-81, over 30 percent of all crashes are related to trucks. I-81’s 2015-2019 truck-related crash rate of 13.2 crashes per 100 million vehicle-miles is substantially higher than the 2015-2019 statewide average rate for similar roadways (5 crashes per 100 million vehicle-miles).

An important benefit of the Project is its ability to reduce crashes through the following Project effects:

- An expected reduction in crashes on I-81 due to widening and modernization of the roadway and interchanges.
- Adding a new lane in each direction on I-81 means that when a crash blocks one or two lanes, the remaining capacity of I-81 will be much better able to handle traffic backlog.



**FIGURE 2 (Left):** INRIX daily vehicle hours of delay and major crashes on the Maryland section of I-81.

- The new connection provided by the Halfway Boulevard Extension will provide a safer, more direct detour for incidents that occur on segments of I-81 and I-70 between the I-70/MD 63 interchange and the I-81/Halfway Boulevard interchange.

### Bottleneck elimination in the freight supply chain

The four-lane I-81 was originally designed to handle 15 percent truck traffic, and current truck volumes exceed 20 percent of total vehicles. This high growth in freight volume has created bottlenecks on the I-81 corridor and will continue to generate travel delays as new employers locate to this area. Overall traffic volumes on I-81 have also doubled in the past three decades, from 30,000 – 50,000 AADT in 1989 to over 71,000 AADT today. The MDOT SHA’s statewide travel demand model projects AADT to be as high as 110,000 vehicles by 2040, representing a growth of nearly 40,000 total vehicles per day.

Freight movement needs reliable traffic operations with minimal delays. Existing warehousing businesses along Halfway Boulevard complain that during many hours of the day, their trucks are delayed getting onto I-81 and I-70 at nearby interchanges. With 56 percent growth in traffic volumes expected by 2040, this delay will only worsen.

The reduction in travel time for passenger vehicles and trucks resulting from the three Project effects listed in the BCA is expected to total 4.0 million person-hours and truck-hours saved. The more efficient use of the roadway network enabled by the Halfway Boulevard extension is expected to reduce 17.6 million truck miles traveled over the 20-year benefit analysis period. The cost savings in operating costs and travel time savings from the reduction in vehicle miles traveled is calculated to be \$36.0 million in discounted 2019 dollars.

### Infrastructure condition that supports commerce & economic growth

The investment in resurfacing of existing lanes on I-81 will reduce the near-term rehabilitation costs compared to the No Build case. Additionally, by increasing the capacity of I-81, the Project will reduce road damage caused by detouring traffic onto local infrastructure.

As the traffic volumes in the I-81 corridor are projected to continue to rise, the reduction in crash-related delays and traffic congestion will result in a decline in damages to local road infrastructure affected by diverted traffic. The two-lane highway is prone to partial and full closure following an incident, diverting traffic to the local road network for an alternative route due to the lack of an adjacent highway or streets meant for large traffic volumes.

### National or regional economic development in areas of need

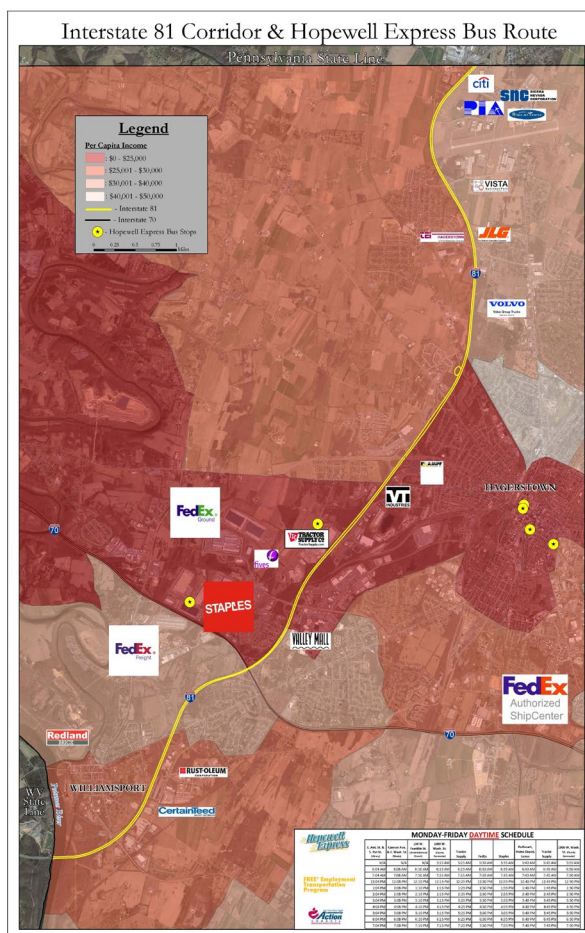
The Census tracts in the Hagerstown, MD-WV-PA Urbanized Area surrounding I-81 have high poverty rates, with 16 to 40 percent of tract populations living below the poverty level, compared to the US average of 12.3 percent. The average per capita income is \$26,633, compared to the Federal average of \$35,672, underlining the importance of

expanding access to well-paying jobs in this rural area. The Halfway Boulevard interchange will create a new link between interstate interchanges on I-81 and I-70, opening land for development along this new road segment and expanding the supply of nearby jobs for communities in Washington County.

Incidents and associated delays on I-81 can cause significant economic losses for businesses along I-81, such as the previously mentioned drop in Valley Mall sales at its hundreds of retail and restaurant businesses, noted in their letter of support. Volvo Powertrain Production Vice President Marcus Mikkinen noted in Volvo’s letter of support that when shipments arrive late to its truck plants, this costs the company \$1,500 per minute, or \$90,000 per hour. “When we lose scheduled production, our employees are required to work holidays and weekends to make up the time at a cost of \$700 per minute, or \$42,000 per hour.” The increase in capacity on I-81 will reduce economic losses associated with employees and supplies being stuck in traffic and will create opportunities for new employers to open in the region.

### Connecting workers to employment centers

Existing traffic on I-81 can make it difficult for employees to arrive to work on time. In addition to improving travel time reliability for workers driving from Washington County communities to jobs along I-81, the increase in capacity on I-81 and associated reductions in travel delay will also increase the reliability of transit on this corridor,



**FIGURE 3 (Above):**  
I-81 Corridor & Hope Express Bus Route

“Our transportation services are critical for low income residents that do not have transportation to get to work. We currently run a free shuttle from downtown Hagerstown to Hopewell Road (parallels) I-81 for employment purposes. The Hopewell Express is offered seven days a week, 24 hours each day to support businesses such as Fed Ex, Staples, Home Depot to mention a few.”

**Geordie Newman**  
Community Action Council

**expanding opportunities for residents without cars to access jobs.** The Washington County Community Action Council operates the Hopewell Express, a free transit service

connecting predominantly low-income communities in Hagerstown directly to employers such as FedEx, Staples, and Tractor Supply. Hopewell Express connects residents to jobs that do not require a post-secondary degree yet offer good wages with benefits for disadvantaged populations in the community.

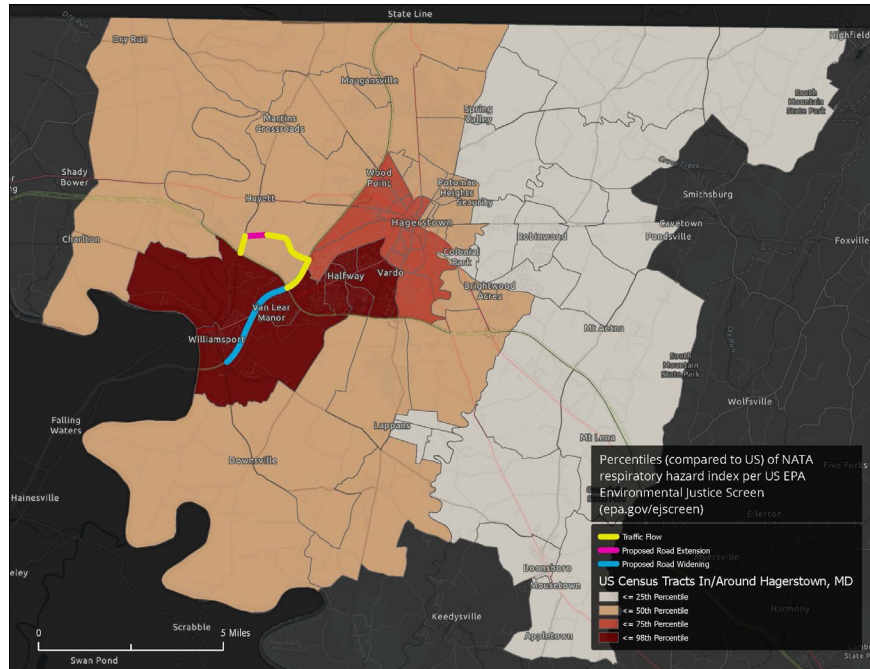
### Advancing the ROUTES Initiative

Consistent with the Department’s ROUTES Initiative, this Project will address the safety issues and infrastructure condition associated with this rural interstate with high share of truck traffic. The Project will expand rural communities’ access to jobs by improving travel time reliability for cars and transit. See Section 6.3.1.4 for additional information about the Project’s integration with the ROUTES Initiative.

### Climate Change and Environmental Justice Impacts

On December 9, 2019, the Maryland Deputy Secretary of Policy, Planning, and Enterprise Services approved the MDOT Supporting Policy Document 606.4, Framework for a Sustainable Transportation System. This document establishes MDOT’s vision, commitments, and goals for a sustainable multimodal transportation system. MDOT Supporting Policy 606.4 was drafted and unanimously approved by the MDOT Sustainability Work Group, a guidance body with representatives from the planning and environmental offices of each Transportation Business Unit (TBU).

MDOT’s sustainability policy document was developed to help MDOT make decisions that balance the needs of community quality of life, environmental health, and a robust economy. While a sustainability framework includes key aspects of social equity, sustainability is not intended or designed to directly examine and address social inequity in its entirety. As such, MDOT’s Sustainability Program has identified potential evaluation criteria to measure the effectiveness of MDOT transportation services across all communities, which will then, in turn, support additional geography-based equity analyses.



**FIGURE 4 (Above):**  
*Environmental Justice Communities in the Project Area*

This project specifically seeks to reduce the transportation system’s environmental impacts in three ways:

### Installation of EV Truck Charging Infrastructure

The project includes a pilot of two locations for EV truck charging: AC&T, which will include a “fast charger,” responsive to the locations higher turnover of vehicles; and Bowman, which will include four chargers that can be used throughout the day, but also overnight as it is a location that truck drivers can overnight their vehicles. The utility company in the region is ready to support this initiative and has confirmed that these locations can be powered. These investments will empower the project parties as well as private partners in the region to learn from this pilot, identify challenges, opportunities, and lessons learned to inform not only Maryland’s expansion of EV truck fleets, but also the industry at large. MDOT is committed to working hand in hand with private partners to better understand these challenges and benefits of this business model to improve its sustainability over time.

The project partners understand that battery-electric trucks are not battery electric cars, but rather have unique needs, such as adequate parking space, appropriate charging hardware, and unique charging schedules and rates. Cooperation across diverse stakeholders is critical to the successful implementation and deployment of EV trucks and charging infrastructure. The lessons learned from this pilot will be shared with peers in the industry as well as provide opportunities to build new collaborative public-private relationship and partnerships. If awarded, this project will unlock an opportunity to pilot this important work that will ultimately benefit state and local governments, commercial fleets and dealerships, energy providers, and hardware manufactures; together, these lessons learned will be shared with USDOT and benefit the industry at large.

“This project supports Maryland’s continued commitment to protect their citizens, the environment and the state’s economy from the effects of climate change and will enable the state to reach its goals set out in the Maryland 2030 Greenhouse Gas Emissions Reduction Act Plan which was presented to and signed off by Governor Larry Hogan in February 2021.

## Reduced Emissions

The connection of Halfway Boulevard to MD Route 63 allows trucks to bypass one highway interchange and reduces VMT and emissions. The roadway parallels I-70 and can be used as a detour route when I-70 has an accident closure.

## Environmental Design Elements

The design of Halfway Boulevard will include a portion of porous asphalt to decrease the amount of impervious area to the project.

## Racial Equity and Barriers to Opportunity

The Project not only improves reliability and connectivity for freight vehicles, but also for residents in the project area to access local grocery and retail options and regional services and amenities. Notably, the project will improve access to jobs, services, and opportunities for those who use public transit and private employment shuttles in the project area.

Additional capacity from the Project will facilitate a more reliable transit corridor due to less congestion and reduced delays. As Hagerstown continues to grow as an employment center, and as the region sees a growing population (as well as a growing population of older adults), the need for reliable transit will only grow.

The Washington County Transit Department (WCT) operates all of the public transit in Washington County; providing safe, affordable, dependable, and accessible service that enhances the mobility in the area. The system runs eight fixed routes in and around Hagerstown. In addition, WCT provides transportation for the elderly and persons with disabilities through a ride assist voucher program. WCT also operates the Job Opportunity Access Program (JOBS) in cooperation with the Washington County Department of Social Services (WCDSS). The urbanized fixed-route service carries the majority of the County's ridership. Total ridership averages over 516,000 passenger trips and all vehicles travel over 500,000 miles annually. These fixed routes overlap with the detour routes for I-81; detours that occur as a result of accidents or congestion on I-81 impacts on-time performance for the fixed route.

This service is augmented by the Hopewell Express, a free shuttle operated by the Washington County Community Action Council that provides employment transportation for employees in the Hopewell Road corridor. The Hopewell Express provides transit service in communities with very high poverty rates, with all bus stops concentrated in Census tracts in which per capita income is less than \$25,000. The Hopewell Express transports Hagerstown residents to the warehouse, distribution and manufacturing employers located off of I-81. With over 80,000 passengers and nearly 127,000 trips in 2019, the Hopewell Express provides critical service to residents who would otherwise be unable to reach jobs. Heavy traffic, especially when caused by crash-related delays, is a barrier to the Hopewell Express' on-time performance and can jeopardize residents' ability to consistently arrive to work on time. The Project's improvements to I-81's safety and capacity will improve transit reliability and expand low-income residents' ability to access jobs. Additionally, the Project's new interchange at Halfway Boulevard will enhance transit connectivity by adding a connection to this area with growing employment opportunities.

## Leveraging of Federal Funding

MDOT and Washington County have worked for nearly two decades to pull together the funding for the I-81 Corridor and for the Halfway Boulevard Extension, and these efforts to leverage federal funding are described separately below. The non-Federal match for the INFRA grant is \$47.12 million, or 44.5 percent.

## State Funding

Widening I-81 in Maryland was identified as a priority for the multistate region 20 years ago. Three years ago, MDOT developed a Finance Plan and a Project Management Plan to ensure that the 12-mile, \$386.7 million Project could be completed. Phase 1 is under construction, with \$93 million committed to date. For Phase 2, MDOT has spent \$5 million for Project design costs, and worked with Washington County to secure additional funds to support construction. The State also participates as part of the multistate I-81 Corridor Coalition, which seeks to coordinate efforts along the corridor. I-81 Phase 2 continues to have significant support, as evidenced by the MDOT SHA's \$42.6 million commitment of State funding.

**“**Volvo North America, situated along I-81 has been a global leader in the advancement of electrical truck engines. As EV Trucks become available, they will need adequate support infrastructure (charging stations) along our highways to convince the trucking industry to invest in EV technology.”

**Dr. Mitesh Kothari**  
Chair, The Greater Hagerstown  
Committee, Inc.

“Interstate 81 improvements are crucial to support safe and efficient travel, and promote economic development in Washington County.”

### Jeff Cline

Washington County Commissioner President



*This Project improves access to a new, secure, 24-hour truck parking facility recently constructed on Halfway Boulevard.*

Maryland was one of the first in the nation to create a Transportation Trust Fund, an integrated account dedicated to funding the State's transportation needs. The Maryland Transportation Trust Fund is indexed to the Consumer Price Index and a sales and use tax equivalent rate that is annually adjusted as a percentage of retail price. Indexing the Fund to inflation provides a more stable non-Federal revenue stream.

The Maryland Department of Transportation has developed a \$15.77 billion 6-year program. The MDOT FY 2021 to 2026, 6-year consolidated transportation program (CTP) dedicates over \$7.203 billion to MDOT SHA's capital program, with approximately \$4.663 billion committed to safety, congestion relief, and community enhancements. Despite this ongoing investment, Maryland's transportation needs continue to outpace available funding.

### Appalachian Regional Commission (ARC) Funding

MDOT has also supported Washington County in securing funding from the ARC. The ARC grant program is designed to further economic progress in distressed Appalachian counties throughout 13 states. The grants are used to support business development and entrepreneurship, education and training, healthcare, and physical infrastructure.

ARC understands the importance of this critical freight corridor through Appalachia and has awarded two Local Access Road grants to Washington

County for the Halfway Boulevard Extension portion of the Project, totaling \$3.8 million. These funds do not require a non-Federal match, as shown in the award notification letters in the appendices. However, the County is contributing \$2.173 million in County and Private funds for this Project component.

### County and Private Funding

For the Halfway Boulevard Extension, Washington County has been working for over two decades to find funding to strengthen and better connect its roadway network despite limited funding availability. Washington County developed a program, Making Connections, to leverage development interests in the creation of needed transportation infrastructure. The program was successful in creating a partnership with Bowman Development Corporation, which is dedicating 8.8 acres of right-of-way needed for the extension of Halfway Boulevard to MD-63. The County is also contributing \$1 million to assist with the non-Federal match for widening I-81.

### Potential for Innovation

The Project provides opportunities to meaningfully integrate innovative technologies, project delivery, and financing to more effectively, efficiently, and meaningfully advance the INFRA program's goals.

### Innovation Area #1: Innovative Technology

Enhancements focused on traffic incident management bring both safety and reliability benefits (as discussed earlier in the proposal) but can also deliver environmental benefits such as reduced fuel consumption and emissions. This project will incorporate a predictive analytics program as a complement to MDOT SHA's already robust Coordinated Highways Action Response Team (CHART) incident management program. The approach collects data from existing sensors; this information is then combined with additional data from mobile apps, connected vehicles, weather, and event management systems. Artificial Intelligence (AI) algorithms ingest, synthesize, and process this information to produce actionable insights and predictions for traffic safety and congestion management, improved response time for incident management, and provides an overall decrease in crash probability.

In a recent Trucker Path survey, 85 percent of drivers cited parking as the number one cause of stress at work. 70 percent of truckers have had to violate Hours of Service (HOS) regulations to find parking and 96 percent have admitted to parking in areas not designated for trucks. In addition, 48 percent of drivers spend an hour or more a

day finding safe truck parking, reducing productivity and costing truck drivers nearly \$5,000 a year in lost wages<sup>6</sup>. Through the new Halfway Boulevard interchange, this Project will improve access to a new, secure, 24-hour truck parking facility on Halfway Boulevard. For a small fee, drivers can reserve a spot in this 170-space lot, using their smart phones to gain entry to the facility. With shorter, more reliable travel times to this facility, long-distance truck drivers will be able to increase their productivity while staying within their FMCSA hours of service limitations.

MDOT SHA will also incorporate information for this corridor in future connected vehicle Roadway Information Messages (RIM) that will be developed and pushed out in the near future, certainly during the lifetime of this project. These messages, utilizing SAE J2735 formatted data, will be readable as future connected vehicle applications become available during the decade.

The Project also includes EV Truck charging infrastructure as part of a novel pilot demonstration. Few EV truck charging stations in the nation are open to public use for freight EV, and this pilot will provide valuable lessons learned for other states interested in expanding EV truck charging infrastructure. See Section 5.2 for a discussion on this project element.

### **Innovation Area #2: Innovative Project Delivery**

The I-81 component of the Project will showcase innovations in environmental review and permitting and experimental project delivery. The Project planning phase concluded with a FONSI document approved by FHWA and concurrence from the environmental review/permit agencies. However, the MDOT SHA is interested in participating in USDOT’s new environmental and permitting approach and will use Special Experimental Projects Number 14 (SEP-14) tools to speed the pace of Project Construction.

Washington County will bid out the construction of the Halfway Boulevard Extension and is expecting to go to construction in FY 2023.

### **Innovation Area #3: Innovative Financing**

Washington County built Halfway Boulevard approximately 15 years ago; available funding precluded connecting to MD 63; however, the County planned to complete this connection when development grew along the new road. Building on the local and state project partnership, Bowman is dedicating 8.8 acres of right-of-way for the road Extension to the County. Other private contributions to the extension total \$300,000.

## **Performance and Accountability**

### **Performance**

All operations and maintenance on Maryland’s State highways are performed by the MDOT SHA, including long-term rehabilitation type work. With over 17,000 lane-miles to operate, the MDOT SHA is keenly aware of the critical need to maintain its system to safely and effectively move people and freight.

The Halfway Boulevard Extension will be operated and maintained by Washington County, which is responsible for the existing segments of Halfway Boulevard. Estimated operating and maintenance costs for the Project are detailed in the BCA Report in the appendices.

### **Accountability**

The MDOT SHA is confident in its ability to deliver Phase 2 of the I-81 corridor widening on-time and on-budget. It is willing to condition construction funding upon meeting specific planning, engineering, and procurement deadlines. **Table 6** shows how the MDOT SHA will structure conditions on the funding.

<b>Activity</b>	<b>Date</b>	<b>Percent Award Forfeited</b>
Notice to Proceed	Spring 2024	5 percent (\$1.9 million)
Substantial Completion	Winter 2026-2027	5 percent (\$1.9 million)
<b>TOTAL AWARD SUBJECT TO ACCOUNTABILITY GOALS</b>		<b>10 percent (\$3.8 million)</b>

**TABLE 6 (ABOVE)**

# VI Project Readiness

With an INFRA grant in place, I-81/Halfway Boulevard Freight Connections project is poised to implement crucial safety and congestion remediation and increase travel time reliability in this vital economic corridor. **MDOT SHA and Washington County have the technical and financial capacity to undertake this project quickly and meet all milestones: INFRA funding will provide the final missing piece to unlock this project's positive impacts. This project has remained a state and local funding priority for years, as demonstrated by this re-submission. To this end, potential risks have been identified and addressed as the project has continued to advance, making this a strong project worthy of high confidence.**

## Technical Feasibility

The project partners have the technical experience and capacity to successfully advance the project in a timely manner and have accounted for potential risks in establishing the project schedule and budget. This project builds upon MDOT SHA and Washington County's previous experience, incorporating lessons learned as well as emerging technologies. In June 2016, the MDOT SHA issued a Project Management Plan (PMP) for the entire four-phase I-81 Project. The PMP provides a detailed description of the management systems and processes that will guide the full range of Project activities to ensure Project completion, as well as organizational roles and responsibilities and key staff. A copy of the Project Management Plan is included in the appendices.

The 3,300 feet extension of Halfway Boulevard will be constructed using MDOT design standards and approved materials. The project includes a floodplain which will be permitted by MDE and included within the NEPA documentation. The right-of-way is privately held, and the owner, Bowman Development Corporation, has agreed to dedicate it. Washington County has experience with other Federal Aid projects of a similar scope and size.

## Engineering and Design Studies and Activities

In 2010, MDOT SHA completed an I-81 corridor planning study, which resulted in a FONSI. Since 2010, MDOT SHA completed design activities for I-81 phase 1, which it subsequently constructed. Beginning in 2017, MDOT SHA initiated phase 2 design activities. To date, these activities have included investigations into innovative contract mechanisms by which to advance I-81 phase 2 construction more quickly and for less cost. MDOT SHA has conducted traffic analyses, environmental inventories and analyses, noise analyses, stormwater management investigations, and ensured existing structures can be avoided where feasible. Washington County has completed environmental letters, a noise analysis, and wetlands analysis to be used within the CE letter for the Halfway Boulevard portion of the project.

## Design Criteria

The MDOT SHA uses the AASHTO design criteria for all its roadway projects as well as the Policy on Geometric Design of Highways and Streets, Policy on Design Standards Interstate Systems (DSIS), and AASHTO Roadside Design Guide (RDG). All controlling criteria is anticipated to meet AASHTO standards without the need for waivers. Washington County uses AASHTO design criteria for its roadway projects. All ARC funded projects are reviewed and approved by MD SHA's Federal Aid Program Division.

## Basis for the Cost Estimate

The Project partners have extensive experience estimated the cost of similar projects and completing such projects on time and within budget. Standard tools and estimates were applied, including contingency levels appropriate to the project's design status.

## Detailed Statement of Work

The MDOT SHA is currently designing to widen I-81 from a 4-lane divided highway to 6-lane divided highway from MD 63 to Halfway Boulevard. The design also includes improvements to the I-70 interchange ramps, addition of stormwater management facilities, drainage improvements, installation of noise barriers where necessary, and resurfacing through the project limits. Washington County will design a 4-lane road with stormwater management and pavement designed to handle heavy truck traffic from the existing terminus of Halfway Boulevard 3,300 linear feet west to Maryland Route 63.



## Project Schedule

**This project is ready to advance.** MDOT SHA will have all necessary pre-construction activities completed by Spring 2024 and intends to obligate an INFRA investment for the construction of I-81 Phase 2 by Fall 2023.

As a statewide priority, MDOT SHA now is actively advancing Phase 2 through the design and engineering process, and fully anticipates advertising a Phase 2 contract in Fall 2023. While design on Phase 2 officially commenced in 2017, the completed design and construction documents for Phase 1 provide MDOT SHA with efficiency during Phase 2. A Project schedule for I-81 Phase 2, including an anticipated contract award timeframe, is displayed in Table 7. Final design and the environmental and permitting process, which includes advertisement and concurrence in award, for the Halfway Boulevard Extension is expected to be completed in time to begin construction in Fall 2022. Construction should be complete no later than Summer 2024.

As outlined in Table 7, all necessary activities will be complete to allow INFRA funds to be obligated sufficiently in advance of the statutory deadline (September 30, 2024 for FY 2021 funds). Further, any unexpected delays will not put the funds at risk of expiring before they are obligated. The project parties are committed and ready to begin construction quickly upon obligation of INFRA funds. This project is a high priority and its positive impacts are pressing to the region. Consequently, the grant funds will be spent expeditiously once construction starts.

All real property and right-of-way acquisition will be completed in a timely manner in accordance with 49 CFR part 24, 23 CFR part 710, and other applicable legal requirements. The private developer, Bowman Development Corporation, is donating right-of-way as part of an in-kind project contributions, the agreement for which has been established. Should additional right-of-way acquisition be necessary, MDOT MTA is prepared to do so in a timely manner.

## Required Approvals

**Planning and environmental review for the entire Maryland I-81 corridor expansion is complete;** final design for Phase 2 will be initiated once notice of INFRA award is received.

## Environmental Permits and Reviews

### NEPA Status

With permits and environmental approvals in place, this project is ready to construct. The MDOT SHA uses the Streamlined Environmental/Regulatory Process for the Project planning phase of the I-81 corridor study. The Project planning phase concluded with a FONSI document approved by FHWA, concurrence from the environmental review and permitting agencies on a preferred/selected alternative, and a corridor permit for wetland/waterway impacts. Any changes during subsequent phases of the Project will require only a re-evaluation of the NEPA document in 2022-2023 and an update of the corridor permit.

MDOT SHA followed NEPA regulatory requirements in preparing environmental review documentation for the I-81 corridor expansion program in Maryland and is ready to advance the project. Agency concurrence on the Purpose and Need was received in October 2001, and an EA was completed on September 15, 2004.

MDOT issued a FONSI/4(f) Evaluation document for the Project in 2010. A re-evaluation document was completed for Phase 1 in 2016, which enabled Phase 1 to be advertised for construction and to begin work in October 2016. MDOT SHA is ready to complete an environmental reevaluation for Phase 2 expeditiously following funding availability upon grant INFRA award, which is necessary prior to FHWA approving a reevaluation. Copies of the EA and FONSI are included in the appendices.

**This Project presents an opportunity to mitigate existing environmental impacts** from the original construction of I-81. The existing runoff on this segment of I-81 drains to median inlets and is conveyed to outfalls into roadside ditches and streams. The Project will add stormwater management facilities at the I-70 and Halfway Boulevard

**TABLE 7 (BELOW):**

Project Activity	Timeline
State and Local Planning Approvals Complete	Fall 2023
NEPA Reevaluation	Fall 2023
Design Completion	Fall 2023
ROW Acquisition	Fall 2023
Plan, Specification, & Estimate (PE&E) Approval	Fall 2023
Procurement	Winter 2023 - 2024
Construction Start	Spring 2024
Project Closeout	Spring 2027

interchanges. In addition, median areas will be evaluated to try and maximize the impervious surface runoff treatment using grass swales and bioswales. Mitigation to wetlands and forests that are impacted by the Project is also being investigated.

Halfway Boulevard has completed coordination with the State Historical Preservation Officer and the Maryland Department of Natural Resources. Additionally, Washington County has performed a traffic noise analysis and wetlands and waterways review of the Extension project area. The alignment of the road was altered to avoid sensitive resources. Coordination letters are included in the appendices.

## **Status of Reviews, Approvals, and permits by other agencies**

### *Environmental Studies*

The MDOT SHA will complete the permit and approval process for I-81 Phase 2 by 2022. The permits received for Phase 1, which should be similar to those required for Phase 2, include: Maryland Department of Environment (MDE) E&S Approval; MDE SWM Approval; NPDES Permit for Storm Water Associated with Construction Activity; MDE Non-Tidal Wetland Permit; MDE Water Quality Certification; US Army Corps of Engineers Permit; and the Maryland Department of Natural Resources Roadside Tree Permit. As noted above, Washington County has begun, and in some cases finished, coordination with State resource agencies regarding the Halfway Boulevard Extension.

### *Public Engagement*

During the planning phase for the I-81 corridor project, MDOT SHA led public outreach efforts along the corridor. The team used the planning document from that process to develop the project included in this proposal. Following INFRA award, MDOT SHA will conduct an additional public meeting to introduce phase 2 design activities to stakeholders.

This project will align with the rural focused ROUTES (Rural Opportunities to Use Transportation for Economic Success) program. The three main activities of that program are:

1. Collecting input from stakeholders on the benefits rural projects offer for safety and economic benefits, as well as the type and degree of assistance rural projects require
2. Providing user-friendly information to rural communities to assist them in understanding and applying for DOT discretionary grants
3. Improving DOT's data-driven approaches to better assess needs and benefits of rural transportation infrastructure projects.

The collaboration will include a peer exchange with neighboring states (West Virginia, Virginia, Pennsylvania) and the I-81 Corridor Coalition. Incorporating a workshop or activity to engage the coalition or regional partners opens the door to new opportunities in exploring innovations in truck parking and routing as it relates to the project. Innovative communications and outreach will connect with locals and through-traffic.

The Project provides improved access for truck drivers traveling on I-81 and I-70 to reach repair services, fueling stations, and safe rest areas near Halfway Boulevard. Our stakeholder outreach will explore innovative ideas such as signage or including that info in a feed, project site, or app.

### *State and Local Approvals*

MDOT SHA will ensure coordination with local planning authorities where necessary.

## **Federal Transportation Requirements Affecting State and Local Planning**

Both components of this Project have long been in the transportation planning documents for the MPO and the State of Maryland, including the state freight plan; the project's incomplete funding package has delayed their advancement, but they remain high-priority projects for the state, the region, and the local jurisdiction. Specifically, one or both components are included in the following:

- HEPMPO FY 2021-2024 Transportation Improvement Program (TIP)
- MDOT FY 2019-2022 Statewide Transportation Improvement Program (STIP)
- HEPMPO 2045 Long Range Transportation Plan
- MDOT 2040 Maryland State Transportation Plan
- Maryland Strategic Goods Movement Plan

## Assessment of Project Risks and Mitigation Strategies

Both components of this Project are extensions of previous work done by the MDOT SHA (I-81 Phase 1) and Washington County (the existing Halfway Boulevard). Both use standard designs and materials and are therefore low-risk projects.

### I-81 Component

Project risks for the I-81 improvements are discussed in the Project Management Plan and the Financial Plan documents completed for I-81 Phases 1-4, which are in the appendices. In addition, risk mitigation strategies have been fully delineated in detail for Phase 1 and will serve as a foundational baseline for developing the more formal risk mitigation strategy for Phase 2. The Phase 1 risk mitigation strategy is available upon request.

Phase 2's minimal right-of-way needs, which currently involve no total property takes, should minimize risk. In addition, the project is well supported by the local business community, the City of Hagerstown, Washington County, the Hagerstown/Eastern Panhandle Metropolitan Planning Organization, and area elected officials.

**TABLE 8 (BELOW):**  
*Potential Risks and Mitigation Strategies*

<b>Risk - Procurement Delays</b>
<p><b>Mitigation Strategy</b></p> <ul style="list-style-type: none"> <li>The project is in the 10-year Washington County Capital Improvement Plan.</li> </ul>
<b>Risk - Environmental Uncertainties</b>
<p><b>Description</b> - Potential impacts to Water of the US, wetlands, trees are possible</p> <p><b>Mitigation Strategy</b></p> <ul style="list-style-type: none"> <li>Any required ROW acquisitions will be appraised to market value and fairly compensated to property owners. No total takes are anticipated at this time.</li> <li>The 2010 FONSI identified impacts to streams, wetlands, floodplains, and forest/woodlands. These impacts were beginning to be reassessed back in 2018-19 based on the preliminary design for Phase 2 that was being developed at that time. Stream and/or wetland Impacts associated with the preliminary design were estimated to exceed the threshold at which mitigation would be required meaning that a mitigation site(s) would need to be identified. Additionally, reforestation was likely to be required per the Reforestation Act.</li> <li>Efforts were being undertaken by the designer to attempt to avoid impacts to the Greenlawn Cemetery on the west side of I-81 in Williamsport. If unable to be avoided, impacts to the cemetery could be problematic.</li> <li>Only 1 public park was identified in the vicinity of the roadway improvements. The LOD was being modified to avoid an impact to the property. If the design would change such that the park is again impacted, some level of Section 4(f) evaluation would be required. There were no hazardous materials sites identified in the 2010 FONSI. There were no RTE issues identified in the 2010 FONSI.</li> </ul>
<b>Risk - Real Estate/ROW Acquisition</b>
<p><b>Description</b> - Fee Simple and temporary construction easements will be required for the project.</p> <p><b>Mitigation Strategy</b></p> <ul style="list-style-type: none"> <li>Any required ROW acquisitions will be appraised to market value and fairly compensated to property owners. No total takes are anticipated at this time.</li> </ul>
<b>Risk - Historic Preservation</b>
<p><b>Description</b> - No elements of historic significance have been found within the project limits</p> <p><b>Mitigation Strategy</b></p> <ul style="list-style-type: none"> <li>If elements of historic significance are found, archeological studies will be performed and the elements will be relocated if possible in accordance with the Maryland Historical Trust</li> <li>Cultural Resources investigations for Phase 2 were initiated in 2018. No historic standing structures were identified but archaeology has not yet been completed and we do not yet have MHT concurrence on a Section 106 effect determination.</li> </ul>

## Halfway Boulevard Component

Given the nature and limited scope of the Halfway Boulevard Extension, the potential for construction and environmental risks are low. The County has anticipated the need to bridge the floodplain with a large span culvert and is aware of the permitting requirements. The project has received Federal ARC grants with the remaining costs planned in the Washington County Capital Improvement Plan. Total funding for this portion of the project will be available in fiscal year 2023 (July 2022).

The interest in developing this property, from both local government and the developer, has continued for a number of years. Bowman currently owns the land, and similar adjacent land uses are thriving and expanding, so it is unlikely that the developer would not move forward with their development project, and similarly unlikely that they would fail to dedicate right of way to the Halfway Boulevard Extension, which is integral to the development project.

**TABLE 9 (BELOW):**  
*Benefit Cost Analysis Summary*

BCA Metric	Project Lifecycle		Mitigation Strategy
	Undiscounted	Discounted (7%)	
Total Benefits	\$219.1	\$82.9	
Travel Time Savings	\$79.6	\$26.7	
Safety	\$91.1	\$31.4	
Vehicle Operating Cost Savings (including Fuel)	\$27.2	\$9.3	
Reduced Pavement Damage	\$1.8	\$0.6	
Reduced Emissions	\$2.6	\$1.4	
Agency O&M Cost Savings	\$16.5	\$13.4	
Total Costs	\$82.6	\$60.3	
Net Present Value (NPV)	\$136.5	\$22.7	
Benefit Cost Ratio (BCR)	2.65	1.38	

**“**I-81 is the economic lifeline of our quad-state region to include Frederick County, Virginia; Berkeley County, West Virginia; Washington County, Maryland; and Franklin County, Pennsylvania... four counties, four states, forty miles”

**L. Michael Ross**  
President Franklin County Area Development Corporation (Pennsylvania)

## LIST OF APPENDICES

All appendices are housed on the MDOT website and can be accessed at the URL below, as well as accessed individually in the hyperlinks for each appendix below:

<https://www.mdot.maryland.gov/tso/pages/Index.aspx?PageId=157#I81>

**Appendix 1:** Benefit-Cost Analysis Technical Report

**Appendix 2:** Letters of Support & Commitment

**Appendix 3:** I-81 Cost Estimate

**Appendix 4:** I-81 FHWA Cost Estimate Review Final Report

**Appendix 5:** I-81 Financial Plan

**Appendix 6:** CTP, TIP, and LRTP – I-81 and Halfway Boulevard

**Appendix 7:** I-81 Phase 2 Tech Project Engineering Drawings

**Appendix 8:** Halfway Boulevard Project Engineering Drawings

**Appendix 9:** Project Management Plan for I-81

**Appendix 10:** EA and FONSI for I-81

**Appendix 11:** Halfway Boulevard Environmental Documentation

